UNITED STATES DEPARTMENT OF AGRICULTURE

BUREAU OF ENTOMOLOGY AND PLANT QUARANTINE

~~WASHINGTON, D. C.~~

Forest Insect Laboratory
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RECOMMENDATIONS FOR SANITATION-SALVAGE AND MAINTENANCE CONTROL ON THE BURNEY-McCLOUD INSECT CONTROL PROJECT WINTER PERIOD 1945-46

As is being pointed out by the writer in his report of accomplishments on the Burney-McCloud Insect Control Project (copy of which will be sent to you soon), the original objectives of the 1944-45 insect control program were fully realized. These were (1) breaking up the increasing epidemic infestation of beetles, particularly Ips confusus; and (2) utilization through logging and salvage of over 4,000,000 board feet of insect-killed ponderosa in trees and snags that otherwise would have been totally wasted.

At the present time infestation conditions are quite satisfactory over most of the project area, and on most units of the Burney-McCloud area no further work is recommended for the 1945-46 season. Also, infestation conditions have changed materially from what they were last year. In 1944, the infestation was dominated by Ips topkilling with western pine beetle (Dendroctonus brevicomis) and flatheads playing a secondary part. These large concentrations of Ips have now been broken up and Ips infestation is currently conspicuous only in a few localities. Western pine beetle (D.b.) infestation increased in 1945 and now dominates the infestation complex. On parts of the Burney Flat Unit covered with control last year, the current infestation is estimated at about 50 board feet per acre and 100 board feet per acre on the uncontrolled portions of this unit.

Under these conditions the general objectives of the 1945-46 winter control program from the entomological standpoint are as follows:

(1) Apply indirect control to avoid further western pine beetle damage by proceeding with sanitation-salvage logging on the Burney Flat unit and other units where needed as rapidly as possible.

(2) Apply maintenance control through direct measures in the Burney Falls State Park and in a zone surrounding it because of the recreational values at stake. A salvage of merchantable infested material is advisable to help defray control costs.

(3) Apply maintenance control on the north half of the Burney Flat unit treated last year which is not included in the present sanitation-salvage program, provided sufficient infestation is found to justify salvage or direct treatment of any aggressive infestation not salvable. The object here is to maintain the ground gained by the control of last year until this area can be covered with indirect control through sanitation-salvage logging.

(4) Apply salvage control to the balance of the Burney Flat unit where no control was undertaken last year, provided sufficient infestation is found to justify salvage operations. While direct control here might have some insurance value and certainly could do no harm, we could hardly expect the work to reduce appreciably the current low level of infestation. For this reason, the cost of the work could easily exceed any probable savings unless the cost were largely offset by values salvaged. Therefore this extension of control is recommended only where ~~the~~ salvage is possible.

(5) Clean up such few scattered Ips groups as still appear in parts of the Burney area by direct means.

Methods of Control Recommended.

The above recommendations include several types of control treatment. These are more fully defined as follows:

(1) Sanitation-salvage control. This consists of marking and removing through logging operations all trees considered as "high risk" to insect attack. Merchantable infested trees should also be removed in the sanitation-salvage operations to further reduce possibility of subsequent insect-caused loss in the reserve stand. Disposal of tops, unmerchantable infested trees or slash is unnecessary.

(2) Direct control for D.b. or Ips consists of complete spotting of all timberland to be treated within the control area, felling of infested trees, peeling of the upper side of the larger logs and burning tops, slash and bark along the side of the felled trees, or burning smaller trees in decks.

(3) Salvage control is synonymous with direct control (above) except all merchantable portions of infested trees are salvaged in order to defray part of the cost of control. Any unmerchantable trees infested with D.b. or Ips should be felled and burned in the usual way and unmerchantable infested logs or tops should be similarly treated. It is not necessary to burn uninfested slash or tops.

The current insect situation in the Burney-McCloud area was quite fully discussed at a meeting held in Berkeley on December 5, 1945, with members of the State Division of Forestry and Berkeley Forest Insect Laboratory. The consensus of this meeting was that further control action

as proposed by the Bureau was fully justified for 1946. It was decided that sanitation-salvage logging was the ultimate aim in the Burney Flat unit, but because of the length of time that it would probably take to cover the whole unit that further control through direct means would be justified in this unit to maintain the low level of infestation gained during 1945 through control, provided the local timber operators were interested and could salvage the infested material.

Three plans of action were proposed as follows:

(1) Setting up a maintenance zone around the Burney Falls State Park involving about 2,400 acres where direct control would be fully justified in order to protect the control work being done in the Park*. This job would have first priority. Salvage of all infested material should be made if possible.

(2) Recleaning the balance of the Burney Flat unit where control was carried on last winter, provided any aggressive infestation was found and only if salvage of infested material was possible.

(3) Application of control in the balance of the Burney Flat unit where no control was carried on last winter, only if salvage of infested material could be accomplished.

In any or all of these plans the State Division of Forestry was prepared to enter into cooperative agreements with the private owners involved to cover one-half of the cost of the actual spotting and control.

Following this meeting, under date of December 7, State Forester DeWitt Nelson proposed to the State Board of Forestry a minimum 1946 control program as follows:

"1. Retreat the Haynes, Black Ranch and Doyle Ranch. This is mostly Ips poles with a few merchantable trees on the Haynes Ranch.
"2. Treat the upper Hat Creek area in fresh logging where there are about 50 unmerchantable trees that need treatment. This is the Wilcox-Smith logging area.
"Estimated cost of treatment of #1 and 2 above is $500 and is anticipated that cooperation can be secured on this program.
"3. Retreat a maintenance zone around Burney Falls State Park to include Secs. 28, 29 and 30, T.37 N., R.3 E., south of Lake Britton and Secs. 3, 4 and 5, T.36N., R.3E. Total of 2,740 acres containing 680 acres of Forest Service land with infested trees. The Forest Service will handle the job on its land.

*Considerable group infestation of Ips and D.b. has also been noted on the north side of Lake Britton. Some of these groups are only a half mile from the Park boundary. Although this area of about 1500 acres was not included in the initial recommendations, it would be desirable to include this area (Area B on the attached map) in present control plans.

"340 acres of State Park land and that Division will undoubtedly handle its own work.
"1740 acres of privately owned land containing approximately 100 trees - these are mostly merchantable trees with D.b. infestation. The principal owners are the P.G.& E. and Fruit Growers. We hope to be able to arrange for salvage of these trees.
"Estimated cost of this minimum program is $800.

"Scattered throughout the balance of the (Burney) area which is preponderantly owned by the Fruit Growers, there are approximately three-fourths of a million feet of timber in need of treatment this season as against two and one-half million feet treated last season. About half of this volume is on the upper half of the Burney unit which was not treated last year.

"The Fruit Growers have indicated that they plan to salvage and sanitation cut all high risk trees throughout this unit. Such a program will, of course, extend over a period of several years and may not result in salvaging all of the presently infested timber. There is, of course, the risk that such a cut may create an additional bug problem; however, observations throughout the State indicate that where there is continuous cutting that no material increased bug population results. Apparently because the bugs go into the fresh slash when they emerge instead of going into the standing timber. The total area involved in this unit is 22,000 acres of which 14,640 acres were treated last season. It may be desirable to work up a program with the Fruit Growers for salvaging infested trees throughout this area on the basis that the Division and Company treat the unmerchantable tops on a cooperative basis. The extent of such a salvage operation would undoubtedly be controlled to some extent by weather, strikes, etc. Spotting on this job will cost approximately $2,000. No estimate has at this time been made of the treating cost. It is planned that Mr. Pomponio of the Division and Dr. Hall of the Bureau will contact Mr. Oliver of the Fruit Growers to see what kind of arrangement can be developed."

As proposed, on December 17, 1945, Mr. Pomponio of the State Division of Forestry and the writer conferred with Mr. Tom Oliver, Manager of the Fruit Growers Supply Company at Susanville. The Fruit Growers Supply Company was fully convinced of the desirability of proceeding with the sanitation-salvage program. Agreement was also reached to proceed with control plans #1 and 2 as proposed at the December 5 meeting. It was decided that Mr. Welder, forester of the Fruit Growers Supply Company, would make contact with the local Burney operators to determine if either or both of these companies would be interested in a sanitation-salvage cut and the problem of scattered salvage trees on the balance of the area. The proposal was that the sanitation-salvage cut would start in the isolation zone around the Burney Falls State Park. The State was prepared to supervise the spotting and do all of the actual treating of infested tops and unmerchantable trees on a 50-50 cost basis, but they would prefer that the Fruit Growers's representative handle all negotiations for the disposal of stumpage. This latter point was fully agreed upon.

Since then, Fruit Growers has reached an agreement with the Burney Lumber Company to take the high risk and scattered infested salvage trees in this unit. Spotting is now underway in the north end of the Burney Flat unit and the State crews are ready to start the treating work.

Estimated Cost of Proposed Program.

On February 1 a further appraisal of the Burney-McCloud area was made by members of the Shasta National Forest and the writer of the current situation. On the basis of the spotting already done in the Burney Flat unit and the information obtained by reconnaissance of the remaining parts of the area, the following estimates in Table 1 are made of the amount of work involved in the program proposed for this season.

Approved by: F. P. Keen
Entomologist,
in Charge

Submitted by: R. C. Hall
Entomologist

Table 1. Estimated control costs in commercial areas, Burney-McCloud areas. 1945-46 winter period.

Area	Ownership	Acres	Estimated trees volume infested			Estimated Cost				
							Direct Control		Total Cost	
			No.of Trees	No.of Poles	Volume Bd.ft.	Spotting	Peel-burn	Salvage*	Peel-burn	Salvage*
Burney Falls	Fruit Growers	1,000	65		36,000	$135	$500	$200	$635	$335
State Park	P.G.& E.	760	35		25,000	125	350	175	475	300
Maintenance zone	Forest Service	680	40		23,000	100	300	150	400	250
Area A	Red River-Cutover	200	10		5,000	50	100	50	150	100
South of Lake	ALL	2,640	150		89,000	$405	$1250	$575	$1660	$985
	P.G.& E.	920	50	100	17,500	150	600	300	750	450
	Forest Service	320	25	15	13,250	50	250	125	300	175
Area B	Red River-Cutover	160	20	150	6,000	30	200	100	230	130
	Small private	160	15	25	6,000	30	150	75	180	105
North of Lake	ALL	1560	110	290	42,750	$260	$1200	$600	$1460	$860
Burney Flat	Fruit Growers	4840	160		145,000	350	1500	750	1850	1100
treated unit in	P.G.& E.	800	30		28,000	125	450	200	575	325
addition to	Other Private	440	10		9,000	50	100	50	150	100
Area A	Forest Service	3400	120		102,000	300	1200	650	1500	950
	ALL	9480	320		284,000	$825	$3250	$1650	$4075	$2475
Burney Flat	Fruit Growers	7000	400		350,000	750		1800		2550
untreated area	Other Private	880	50		45,000	100		250		350
	Forest Service	400	20		20,000	50		75		125
	ALL	8280	470		415,000	$900		$2125		$3025

Estimated control costs on Haynes, Black, Doyel and Wilcox-Smith ranches. 30 merchantable trees and 100 unmerchantable poles, all on private land, at an estimated cost of $500.

*The cost of salvage control, i.e. treatment of unmerchantable infested trees and tops is estimated at approximately half the cost of direct control treatment.

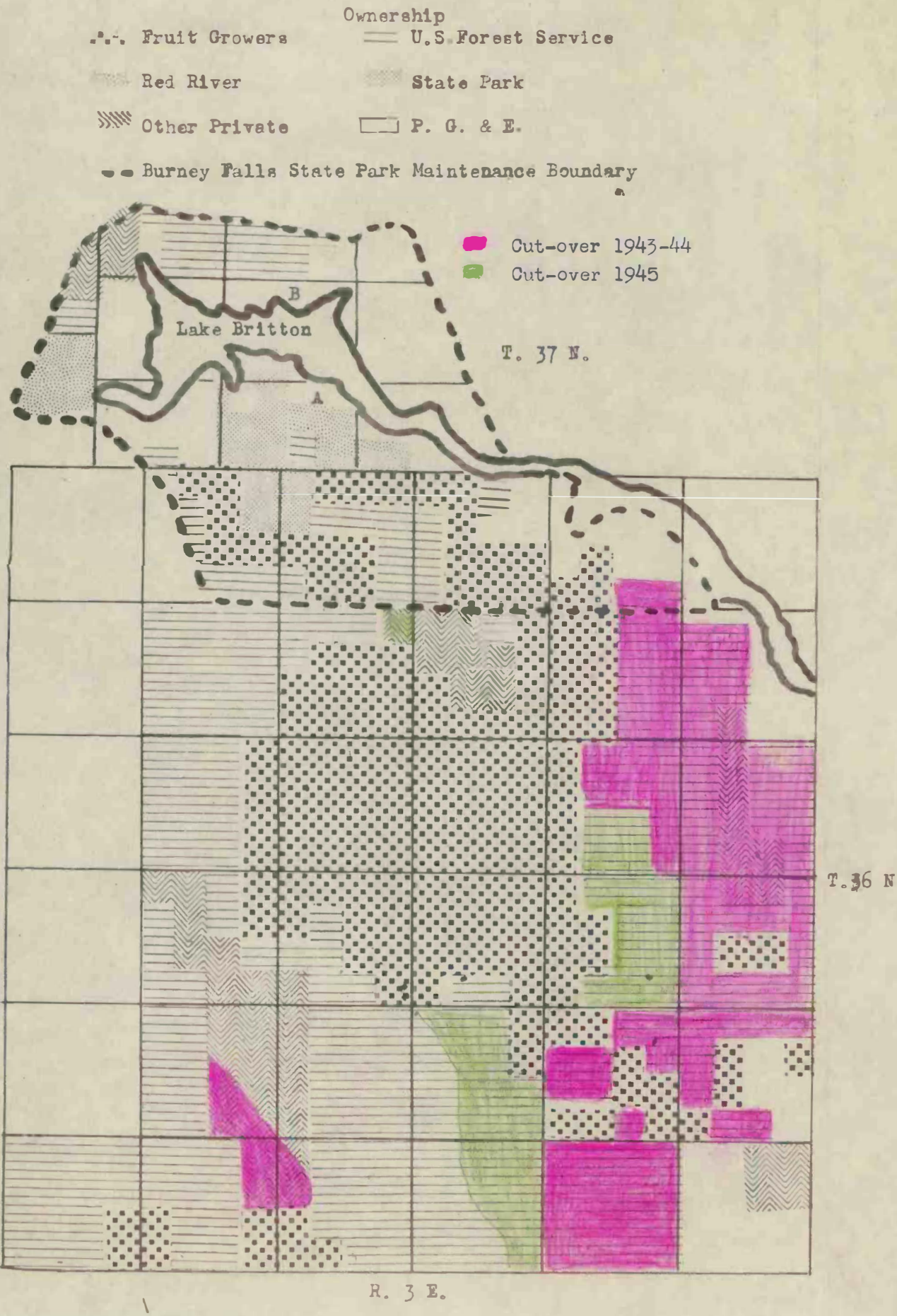
Table 2. Summary of estimated costs by private ownerships; 1945-46 period.

Ownership	Area	Acres	Estimated Cost	
			Peel-burn	Salvage
Fruit Growers	Area A	1,000	$635	$335
	Burney Flat treated	4,840	1850	1100
	Burney Flat untreated	7,000		2550
Total		12,840	$2485	$3985
P.G.& E.	Area A	760	475	300
	Area B	920	750	450
	Burney Flat treated	800	575	325
Total		2,480	$1800	$1075
Red River	Area A	200	150	100
	Area B	160	230	130
Total		360	$380	$230
Misc. Private	Area B	160	180	105
	Burney Flat treated	440	150	100
	Burney Flat untreated	880		350
Total		1480	$330	$555
All private	Area A	1960	1260	735
	Area B	1240	1160	685
	Burney Flat treated	6080	2575	1525
	Burney Flat untreated	7880		2900
	Small ranches	500	500	
Total		17,660	$5,495	$5845

Summary of estimated costs by Forest Service ownership; 1945-46

U. S. F. S.	Area A	680	400	250
	Area B	320	300	175
	Burney Flat treated	3400	1500	950
	Burney Flat untreated	400		125
Total		9080	$2200	$1500

BURNEY-McCLOUD INSECT CONTROL PROJECT



R.2 E. R.3E. R.4E.

37 N.

T. 36 N.

T. 35 N.

T. 34 N.

T. 33 N.

T. 32 N.

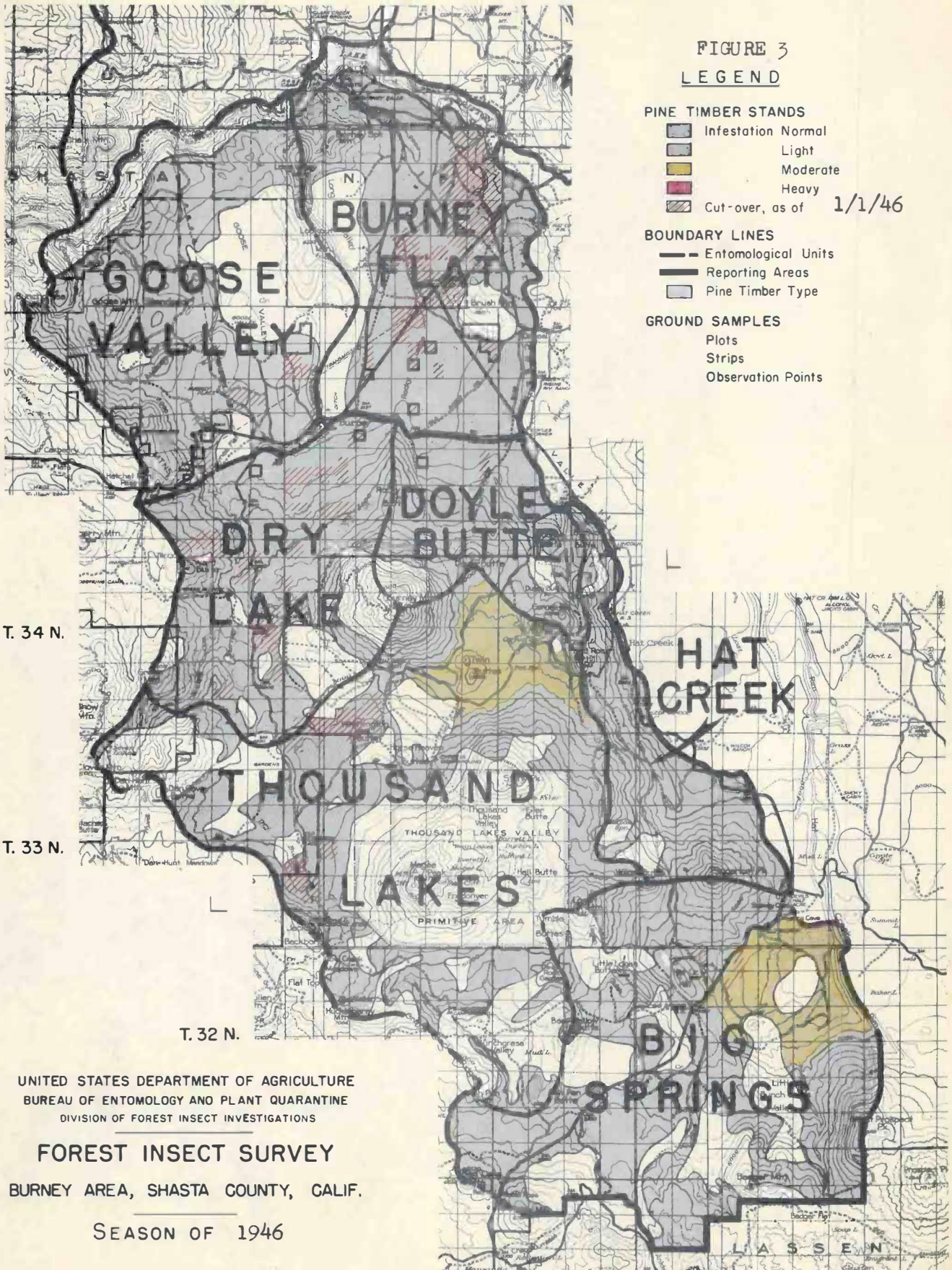


FIGURE 3

LEGEND

PINE TIMBER STANDS

- Infestation Normal
- Light
- Moderate
- Heavy
- Cut-over, as of 1/1/46

BOUNDARY LINES

- Entomological Units
- Reporting Areas
- Pine Timber Type

GROUND SAMPLES

- Plots
- Strips
- Observation Points

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DIVISION OF FOREST INSECT INVESTIGATIONS

FOREST INSECT SURVEY

BURNEY AREA, SHASTA COUNTY, CALIF.

SEASON OF 1946

SCALE MILES
0 1 2 3